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EFFECTIVENESS OF USING THE SURVEY METHOD FOR OPTIMIZATION OF THE DIAGNOSIS НАРУШЕНИЯOF CARBOHYDRATE METABOLISM DISORDERS

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Annotation: To date, there are various methods and methods for diagnosing NTG. This is the determination of blood sugar both on an empty stomach, and after a carbohydrate¬load, the determination of glucose in the urine, the determination of glycolized hemoglobin, etc. The advantages of these methods are that they have sufficient accuracy, specificity,and sensitivity.

The use of survey methods for the diagnosis of HTG and diabetes mellitus contributes to the optimization of diagnostic work among the population.

Keywords: violation, carbohydrates, metabolism, clinic, diagnosis.

INTRODUCTION

Among numerous risk factors for CHD, diabetes mellitus (DM) occupies a special place (1,4,6,14). This is explained by the fact that almost all types of metabolism are disrupted in DM, and, first of all, carbohydrate, mineral, fat and protein metabolism. Therefore, favorable conditions are created for the formation of cardiovascular diseases and mortality from them.

It should be noted that along with the high frequency of DM, there is a high prevalence of its latent forms. Numerous epidemiological studies conducted in various countries indicate that the prevalence of HIV / AIDS in the United States is very high. DM and HTG differ significantly in different populations (2,5,8,9,11,15,17).

For example, among older residents in Taiwan (mean age 73.1 years), the incidence of HTG was 20.2% for men and 20.7% for women (3,4,7,10,16). In the United States, more than 10 million Americans are diagnosed with diabetes. The prevalence of DM among blacks is significantly higher than among whites. Every year the number of patients with diabetes increases.

Several studies on the epidemiology of DM and HTG have been conducted in Uzbekistan (8,12,14). According to these studies, the prevalence of DM and HTG among the population of the republic is quite high. In general, the prevalence of DM in various regions of the republic was 1.9%, and NTG - up to 4%. Theprevalence of DM in the urban population was significantly higher (3.9%). Along with the widespread prevalence of CHD in DM , there is also a high mortality rate from this disease [13,14,14].

A special feature of the diagnostic process is the complexity of using a number of invasive methods, as well as methods related to the use of radioactive agents, as well as other methods related to invasive intervention.

In this regard, the use of non – invasive research methods, in particular, questionnaire diagnostic methods, is of great importance. Survey methods are quite simple, economical and do not cause harm to the body. The importance of survey methods of diagnosis is especially increased when it comes to pregnant women.

To date, there are various methods and methods for diagnosing NTG. This is the determination of blood sugar both on an empty stomach, and after a carbohydrateload, the determination of glucose in the urine, the determination of glycolized hemoglobin, etc.

The advantages of these methods are that they have sufficient accuracy, specificity,and sensitivity. At the same time, during mass preventive examinations of the population, they have to spenda large amount of time, reagents, and appropriate equipment and personnel are needed. It should also be noted that among pregnant women, carrying out stress tests is highly undesirable. In this regard , the developmentботкof new, relatively simple, cost-effective andaffordable methods for the diagnosis of HTG and, above all, survey methods is of particular importance.

MATERIAL AND METHODS

70703 patients were examined in Bukhara, who were examined under the program that provides for the identification of the main components of MS.

The prevalence of such NCDs as obesity and BMIwas studied, Diabetes and impaired glucose tolerance, arterial hypertension, coronary heart disease, anemia, chronic pyelonephritis. Among the people who were diagnosed with NCD during the screening, an analysis was made (according to medical documents and anamnesis) about diseases detected earlier in medical institutions.

The diagnostic capabilities опросныof questionnaire methods for the diagnosis of impaired glucose tolerance (HTG), chronic pyelonephritis, and stable exertional anginawere studied.

The following methods were used: epidemiological, survey, biochemical, and instrumental methods.

Survey methods

- A standard questionnaire developed for this study.

Instrumental methods:

- ECG at rest in 12 standard leads.
- When assessing blood pressure (BP), the average values of 2 measurements taken at intervals of at least 2 minutes will be taken into account.
- Overweight тела .

Biochemistry studies:

- The state of glucose tolerance: based on the indicators of the standard glucose tolerance test (TSH) with the determination of fasting glycemia, as well as 1 and 2 hours after taking 75 g of glucose by the subject.
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RESEARCH RESULTS AND DISCUSSIONS

According to the obtained data (tab.1.), among people with a positive response to the HTG detection questionnaire, only more than 1/3/of the respondents had hyperglycemia in the form of HTG or DM (37.42%). The results of the analysis of DM detection in positive and negative survey variants are of particular interest. The fact that there are symptoms of this disease in DM is a well-known fact. But in our study, it was found that even with a negative version of the survey, 20.68% of cases have hyperglycemia in the form of HTG or DM. It is especially important to emphasize that more than half of cases of newly diagnosed DM occurred with a negative response to the questionnaire. These data indicate the possibility of a mild or asymptomatic course of DM.

Table 1. Detection rate of HTG and DM in different survey variants (in%)

NTG and SD	The survey is positive	The survey is negative
Norm	62.58	79.33
NTG	23.93 *	18.35
SD-previously	8.59 *	0.00
SD-first	time 4.91 *	2.33

Note: * - significance of differences relative to the group with a negative survey result.

The data obtained indicate that the questionnaire is highly effective in detecting NTG. In order to clarify the question of the sensitivity of the questionnaire, we studied the average glycemic indices among individuals with different variants of the survey conclusion.

At the same time, it should be noted that with a positive response to the questionnaire for detecting HTG in 48.74%, glucose tolerance was normal. On the other hand, with the negative version of the questionnaire, 24.91% of individuals were diagnosed with HTG and another 1.7% with DM. Therefore, a negative response to the NTG detection questionnaire does not mean that the individual does not have NTG. For greater clarity, the above datais presented as a figure (fig.1).

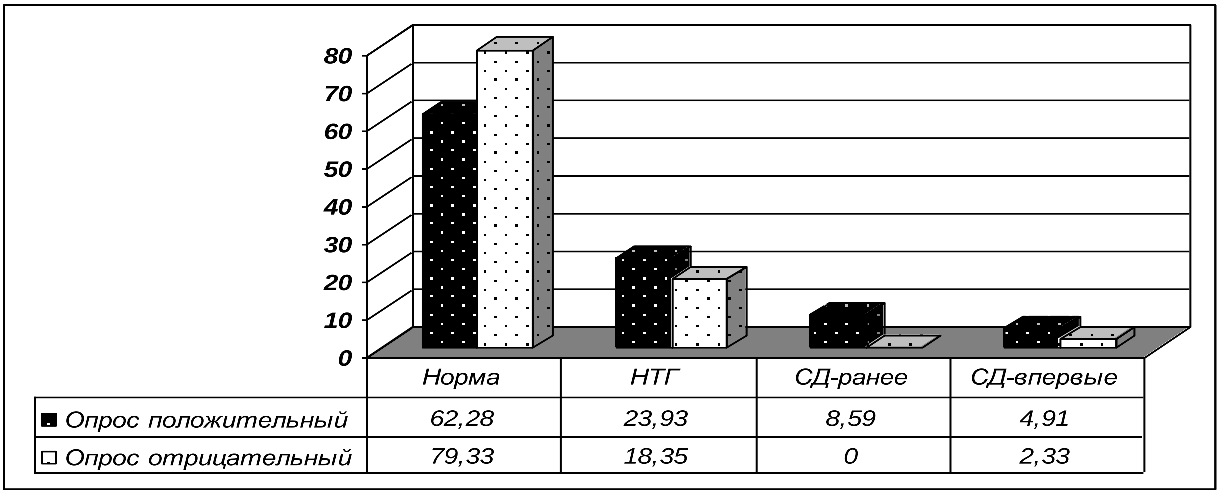


Figure 1. Frequency of HTG and DM in different survey variants

Next, we analyzed the average levels of glycemia in different response options to the questionnaire. According to the data obtained (Table 2), among individuals with a positive version of the survey conclusion, fasting blood glucose levels were significantly higher than with a negative and questionable conclusion. Moreover, the revealed differences were statistically significant ($p<0.05$). Also, statistically significantly (($p<0.05$), glycemic indices at 1 and 2 hours after glucose loading were higher than in the negative and doubtful versions of the survey.

However, high values of glycemia in individuals with a positive version of the survey indicate that the sensitivity of the questionnaire increases with increasing glycemic indicators. In other words – the higher the glycemic levels, the higher the probability of a positive response to the questionnaire.

Table 2. Average glycemic values for different survey options

Average values (M)			
	Negative (n=268)	Questionable (n=20)	Positive (n=251)
Fasting blood glucose	74.85	81.22	89.03 *§
Glycemia after 1 hour	122,31	130,18	149,07 *§
Glycemia	73.95	78.56	91.37 *§

after 2 hours			
Error (± m)			
Fasting blood glucose	Negative	Questionable	Positive
Glycemia after 1 hour	1.22,22	1.34,34	2.94,94
Glycemia after 2 hours	3.14,14	3.74,74	4.81,81

Note: * - reliability of differences relative to the group with a negative survey result; § - reliability of differences relative to the group with a questionable survey result

Given that the aim of this study is to study the state of health and the possibility of optimizing the diagnosis of EGD, we analyzed data on the frequency of hyperglycemia among individuals aged 20-49 years and 50-69 years (Table 3). As it turned out, the frequency of both HTG and DM was lower than in older people. Moreover, the revealed differences were statistically significant.

Table 3. Frequency of HTG and DM in different responses to the hyperglycemia questionnaire.

Number of observations					
Age	Survey for the presence of NTG	Normal	NTG tolerance	SD выявdetected earlier	СД DMdetected for the first
time 20-49 years	Positive	78	21	4	2
	Negative-	254	54		2
50-69 years old	Positive	24	18	10	6
	Negative-	53	17		7
As a percentage					
Age	Survey for the presence of NTG	Normal	NTG tolerance	SD выявdetected earlier	СД DMdetected for the first
time 20-49 years	Positive	74.29	20.00	3.81	1.90
	Negative-	81.94	17.42	0.00	0.65
50-69 years	Positive	41,38 *	31,03 *	17,24 *	10,34 *
	Negative-	report 68,83	22,08	0,00	9,09 *

Note: the table shows the significance of differences in relation to the age group of 20-49 years.

At the same time, it should be noted that cases of HTG and newly diagnosed DM also occurred with a negative response to the questionnaire. It should be noted that in individuals over 50 years of age, more than one in five cases of HTG and almost one in four cases of newly diagnosed diabetes occurred with a negative version of the survey for detecting hyperglycemia.

A comparative assessment of average glycemic levels was performed (Table 4).

See Table 4.Average glycemic levels in different responses to the hyperglycemia questionnaire.

		The survey is positive			The survey is negative		
Age	Glycemia	n	M	± m	n	M	± m
20-49 years	Fasting	105	5.34	0.14	310	4.95	0.08
	After 1 hour	101	8.33	0.19	305	7.98	0.15
	After 2 hours	101	5.55	0.15	305	5.42	0.10
50-69 years	Fasting	57	6.99	0.30	77	5.34	0.13
	After 1 hour	52	7.21	0.37	69	8.11	0.16
	After 2 hours	52	5.24	0.29	69	5.44	0.14

Note: the table shows the significance of differences in relation to the age group of 20-49 years.

It turned out that in the positive version of the survey, the levels of glycemia, both on an empty stomach and after glucose loading after 1 and 2 hours, are higher than in the negative version of the survey. At the same time, among individuals aged 50-69 years with a positive version of the survey, the levels of glycemia, both on an empty stomach and after glucose loading at 1 and 2 hours, were lower than with a negative version of the survey.

Based on the above, the proposed questionnaire can be used as a screeningtestfor the detection of HTG.

Conclusions

1. The use of survey methods for the diagnosisof HTG and diabetes mellitus contributes to the optimization of diagnostic work among the population.
2. To optimize diagnostic and treatment-and-prevention processes, it is necessary to introduce more standard, non-invasive diagnostic methods using special questionnaires and conduct sanitary and educational work among the population.

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